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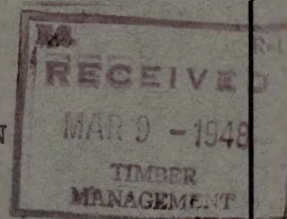
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TITLE

SURVEY OF MOUNTAIN PINE BEETLE INFESTATION
IN PONDEROSA PINE ON LEWIS AND CLARK
NATIONAL FOREST - 1947

by
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Forest Insect Laboratory
Coeur d'Alene, Idaho
March 8, 1948

SURVEY OF MOUNTAIN PINE BEETLE INFESTATION
IN PONDEROSA PINE ON LEWIS AND CLARK
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A report from the Lewis and Clark National Forest of bark beetle infestations on the Musselshell and White Sulphur Springs Ranger Districts in the summer of 1947, led to the examination of those areas by the station leader, J. C. Evenden, in early September of that year. During his brief visit he found an outbreak of the mountain pine beetle in ponderosa pine on the Musselshell District of sufficient intensity to warrant a more intensive survey. This was done in late October with a four-man crew from the Forest Insect Laboratory at Coeur d'Alene, Idaho. From the survey, the extent and severity of the infestation was to be determined.

Ponderosa pine timber type lies between comparatively narrow altitudinal limits from the lowest timber line for a short distance up the mountains. At the upper limits of the ponderosa pine type, lodgepole pine and Douglas fir gradually supplant the ponderosa pine.

The infestation was found to be much more extensive than had been anticipated. The preceding condition in addition to long distances to the areas to be surveyed, slow travel conditions, scarcity of road signs, and unfamiliar country, all contributed to the light survey coverage it was found necessary to make in order to complete the project in the allotted time. However, the familiarity of Ranger Forsman with the country, and his unusually fine cooperation made it possible to examine much more of his district than could have been done without his help.

A description of the infestation noted on the various areas is given in the following pages.

Castle Mountain Region

Pasture Gulch

800 acres

Infested ponderosa pine per acre	.45
Percent of ponderosa pine stand infested	1.0
Percent of area sampled	3.0
Estimated infested trees in area	361
Percent of stand killed in 1945-6	7.8
" " " from 1945-7	8.8

In addition to a light general loss over the entire unit, a high percent of kill has occurred in a few small areas. Brood of the mountain pine beetle was heavy, indicating a potentially decided increase in number of attacked trees in 1948.

Flagstaff Creek

800 acres

This unit has been divided into two areas of infestation, one of approximately 40 acres on the East Fork of Whetstone Creek and the other of about 760 acres on the various forks of Flagstaff Creek. On the smaller area there are an estimated 50 infested trees. Losses in the last three years in this small patch of timber are estimated to have been 25 percent of the green stand prior to this outbreak. The infestation in 1947 equalled at least 5 percent of the stand. On the larger area there are an estimated 450 infested trees. In 1945-6 about 15 percent of the stand was killed, and in 1947 approximately 2.5 percent.

The data secured from this unit was considered as giving an inflated infestation value due the survey strips having sampled too high a ratio of the heavily infested area. Infested tree estimates have been adjusted to conform with general knowledge of the area.

Four Mile Creek

300 acres

This unit, consisting of a continuous band of ponderosa pine timber on both national forest and private land, supports a very light infestation on an estimated area of 300 acres.

A similar infestation to the preceding one is present in the patches of timber along the edge of the national forest northwest of Groveland as far as the Bonanza Creek drainage. There are estimated to be 600 acres of lightly infested timber on this unit.

Little Belt Mountain Region

The largest infested area in this region is on the north side of the Musselshell River on the Daisy Dean Creek drainage. Scattered single trees and groups were noted on the more than 9,000 acres of this watershed. Drainages which were more intensively examined revealed the following conditions from an analysis of the survey data.

Spring Creek500 Acres

Infested ponderosa pine per acre	.18
Percent of " " stand infested	.7
" " area sampled	16.7
Total infested trees in area	90
Percent of stand killed in 1945-6	9.0
" " " from 1945-7	9.7

Although the infested trees in this drainage were comparatively few in 1947, the brood is heavy and indicative of a decided increase in 1948.

Clark Fork of Morrisey Creek150 Acres

On these drainages the ponderosa pine type is merely a narrow fringe along the edge of the foothills, quickly merging into Douglas fir and lodgepole pine types with increase in altitude. Except over a small area, the latter two species comprise 50 or more percent of the marginal stand.

Infested ponderosa pine per acre	.35
Percent of " " stand infested	.52
" " area sampled	3.9
Total infested trees in area	88
Percent of stand killed in 1945-6	3.7
" " " from 1945-7	4.2

Mountain pine beetle brood is sufficiently numerous to indicate an infestation at least equal to that in 1947.

Trombone Creek500 Acres

The current years' (1947) loss on this unit has not been as heavy as in areas adjoining to the northeast, but total kill for the past three years averages slightly higher. Brood is heavy and indicative of a decided increase in 1948.

Infested ponderosa pine per acre	.4
Percent of " " stand infested	1.45
" " area sampled	4.0
Total infested trees in area	200
Percent of stand killed in 1945-6	4.5
" " " from 1945-7	5.95

This unit is on the western end of an almost continuous band of infested ponderosa pine timber extending to the Roberts Creek drainage.

Antelope-Hopley Creek7,200 Acres

Ponderosa pine, extending from Haymaker to Roberts Creek drainage, occurs on an estimated 7,200 acres. From the data there has been derived an estimate of 4,600 trees attacked on the area in 1947.

Infested ponderosa pine per acre	.64
Percent of " " stand infested	1.14
" " area sampled	.46
Total infested trees on area	4600
Percent of stand killed in 1945-6	4.38
" " " from 1945-7	5.52

Brood were numerous in the sampled trees, indicating a decided increase may occur in 1948 in number of infested trees.

In general, the ponderosa pine in this region is short and of small diameter. Crowns are relatively long and the derived lumber quite knotty and of inferior quality. In spite of these conditions there is considerable local demand for the lumber. For that reason the ponderosa pine has a relatively high value in the local forest economy.

From the evidence obtained the present infestation seems to have been active at least four years and possibly longer. Scattered "black-top" trees and groups seem to indicate either earlier losses from the present infestation or an outbreak only a short time prior to the present one.

Recommendations for control of the infestation, on the areas discussed in this report, were made on October 30, 1947 by J. C. Evenden.